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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/709,862

06/02/2004

Otis L. Nelson JR.

200402PM

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7590

09/05/2008

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EXAMINER

TOOMER, CEPHIA D

ART UNIT

PAPER NUMBER

1797

MAIL DATE

DELIVERY MODE

09/05/2008

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/709,862	Applicant(s) NELSON ET AL.	
	Examiner Cephia D. Toomer	Art Unit 1797	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on 16 June 2008.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-14 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-14 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--------------------------------------------------------------------------------------|-------------------------------------------------------------------|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on June 16, 2008 has been entered.

This Office action is in response to the remarks filed June 16, 2008

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 1, 2, 7-10, and 12-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson (6,488,723) in view of Orr (6,039,772).

Nelson discloses a motor fuel additive composition comprising (a) a fuel conditioner component and (b) a detergent component. The fuel conditioner (a) comprises (i) from 2 to 50 percent by weight of a polar oxygenated hydrocarbon compound and (ii) from about 2 to about 50 percent by weight of an oxygenated compatibilizing agent. The detergent component (b) is selected from the group consisting of (i) a reaction product of a substituted hydrocarbon (A) and an amino compound (B), and (ii) a polybutylamine or polyisobutylamine (see abstract). The polar oxygenated hydrocarbon has an average molecular weight of from about 200 to about 500, and acid number of about 25 to 175, and a saponification number of about 75 to about 200 (col. 7, lines 11-33). The oxygenated compatibilizing agent has a solubility parameter of from about 7.0 to about 14.0 and moderate to strong hydrogen-bonding capacity (col. 7, lines 53-62). The hydrocarbon compound (A) of the detergent component is a substituted hydrocarbon of the formula R_1-X wherein R_1 is a hydrocarbyl radical having a molecular weight in the range of about 150 to 10,000 and X is selected from the group consisting of halogens, succinic anhydride and succinic dibasic acid (col. 4, lines 52-65). The amino compound (B) is of the formula $H-(NH-(A)_m)_n-Y-R_2$ wherein Y, A, m, n, and R_2 are identical to those in the instant claim 8 (col. 5, lines 1-21). The polybutylamine or polyisobutylamine is identical to that in instant claim 8 (col. 6, lines 30-46). Further, the composition includes other additives such as methyl tertiary butyl ether (MTBE) and ethyl tertiary butyl ether (ETBE), alcohols such as methanol or

ethanol, and additives that are “typically employed in motor fuels” such as common anti-knock additives (col. 9, lines 56-60). Nelson also discloses examples wherein the additive composition was added to a base fuel in amounts between 40 ppm and 1000 ppm (col. 10, lines 44-50; col. 11, lines 14-20).

Nelson is silent with respect to the composition comprising methylcyclopentadienyl manganese tricarbonyl (MMT).

Orr discloses a fuel additive composition comprising MMT and a fuel conditioner. The conditioner comprises polar oxygenated hydrocarbons, such as aliphatic alcohols, and methyl propyl ketone, an oxygenated compatibilizing agent. MMT is included at low amounts of from about 0.001 to about 0.1 gram/gallon as a known anti-knock additive (col. 1, lines 30-45; col. 12, lines 17-28; claim 12).

It would have been obvious to one of ordinary skill in the art at the time of invention by applicant to utilize MMT as the anti-knock additive in Nelson, as it is an anti-knock additive “typically employed in motor fuels”, and would therefore reduce engine knocking and increase octane rating.

4. Claims 1-14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Nelson in view of Cunningham (5,679,116).

The discussion of Nelson in paragraph 5 above is herein incorporated by reference.

Nelson is silent with respect the composition comprising MMT, and the order in which the additive is added to a base fuel.

Cunningham discloses a fuel additive composition comprising MMT, a detergent, polar oxygenated hydrocarbons, and organic solvents, which could be oxygenated compatibilizing agents (col. 2, lines 12-67; col. 11, lines 23-30). Further, MMT is included at low amounts in the range of about 0.0078 to about 0.25 g/gal (col. 14, lines 19-60). The inclusion of MMT proves to be beneficial as well by enhancing the performance of the detergent (col. 9, lines 1-6). Additionally, it is preferable to blend the components of the additive composition with a base fuel concurrently, but they can also be added to the base fuel either individually or in various subcombinations (col. 15, lines 44-52). It would have been obvious to one of ordinary skill in the art to combine the teachings of Nelson and Cunningham in order to utilize MMT as an anti-knock additive, as well as to include the advantages of performance as disclosed by Cunningham.

Applicant's arguments have been fully considered but they are not persuasive.

Applicant argues that adding the MMT to the additive package before mixing into the fuel as opposed to adding the MMT to the fuel before or after mixing in the additive package is not obvious. Applicant argues that by practicing the present invention lower amounts of MMT is required to maintain the anti-knock performance and ORI reduction. Applicant argues that the examiner simply rejecting the examples as not being pertinent without stating a basis is improperly using opinion to overcome the fact that the Examiner has no valid basis of rejection.

Nelson teaches that incomplete combustion of motor fuels in internal combustion engines is a common problem that generally results in the formation and accumulation of carbon and other deposits and that these deposits reduce engine operating efficiency. Nelson teaches that before his invention this inefficiency was usually overcome by employing a higher-octane gasoline. Given these teachings of Nelson, the skilled artisan recognizes that significantly boosting the octane by using an increased amount of MMT would not be required.

Examples 1 and 2 are directed to two different cars wherein test are run with 2 neat fuels and the fuels with DurAlt. Applicant does not define DurAlt; however, the paragraph following the table state that manganese is present in the fuel. Applicant provides no examples wherein DurAlt is not present and there are no proportions for any of the components. The examiner cannot ascertain if the presence of manganese influences the results or if some other factor contributes to the results. The examiner maintains that Applicant's results are not unexpected because Orr and Cunningham both teach that MMT reduce engine knocking and increase octane rating. Therefore one combining Nelson with the secondary references would have a reasonable expectation of successfully producing a fuel composition that requires a low concentration of MMT and that would reduce engine octane requirement increase.

Applicant argues that there is nothing in Orr or Cunningham that discloses, teaches or suggests how the references should be modified to provide for the use of the additive composition of Nelson and the unexpected ability to reduce the amount of MMT.

Orr does not need to be modified because it is a secondary reference. Orr is relied upon for teaching that the most common organo-metallic compound, tetraethyl lead, which is disclosed in Nelson, may be replaced by low concentrations of MMT. Orr teaches that an amount of from 0.001 to about 0.1 g/gal may be added to fuel compositions (see col. 1, lines 15-45).

Cunningham also does not need to be modified because it to is a secondary reference. Cunningham is relied upon for teaching that the addition of MMT to fuel conditioner-type additives improves the effectiveness of a highly effective deposit control additive and control or minimize ORI (see col. 1, line 50 through col. 2, lines 1-5).

2. All claims are drawn to the same invention claimed in the application prior to the entry of the submission under 37 CFR 1.114 and could have been finally rejected on the grounds and art of record in the next Office action if they had been entered in the application prior to entry under 37 CFR 1.114. Accordingly, **THIS ACTION IS MADE FINAL** even though it is a first action after the filing of a request for continued examination and the submission under 37 CFR 1.114. See MPEP § 706.07(b). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any

extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Cephia D. Toomer whose telephone number is 571-272-1126. The examiner can normally be reached on Monday-Thursday.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Glenn Caldarola can be reached on 571-272-1444. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Cephia D. Toomer/
Primary Examiner
Art Unit 1797